**Participation of private sector for development of geo-thermal energy**

409. SHRI C. RAMACHANDRAIAH. Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) whether the participation of private sector is encouraged in developing geo-thermal energy in the country;

(b) if so, the details of support extended to the participants by the Government during the last three years, year-wise;

(c) whether any location in the country has been identified to generate the energy; and

(d) if so, the details thereof along with the measures taken to identify new locations in the country?

THE MINISTER OF STATE OF THE MINISTRY OF NEW AND RENEWABLE ENERGY (SHRI VILAS MUTTEMWAR): (a) and (b) The Ministry of New and Renewable Energy is encouraging participation of private sector in all forms of renewable energy, including geo-thermal energy. The Ministry has encouraged the private sector participation in geo-thermal energy by allowing access to the data collected on geo-thermal resource in India by the National Geophysical Research Institute (NGRI), Hyderabad through the Ministry's support. The Ministry also facilitates the private sector to undertake their own investigations/assessment studies for geo-thermal energy and submission of Detailed Project Report (DPR) to the concerned State Government for exploitation of this resource.

None has approached the Ministry for financial support during the last three years for harnessing the geo-thermal energy.

(c) and (d) Based on the studies carried out by NGRI so far, the Puga Valley in Ladakh in Jammu and Kashmir and Tatapani in Sarguja District of Chhattisgarh have been identified as potential sites for tapping the geo-thermal energy for power generation and thermal applications. Such studies are also in progress through NGRI in Surajkund in Jharkhand, Badrinath-Tapovan in Uttarakhand and Satluj-Beas and Parvati Valleys in Himachal Pradesh.

**Hydro and wind power generation**

410. SHRI SANJAY RAUT: Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) whether it is a fact that there is a vast potential in hydro power resources and wind power generation in the country;

(b) if so, Government's response to tap these natural resources in the country;

(c) whether Government is encouraging community based mini hydro projects in the country so that power generation targets are achieved, particularly in rural and tribal areas of the country; and

(d) if so, the details thereof?

THE MINISTER OF STATE OF THE MINISTRY OF NEW AND RENEWABLE ENERGY (SHRI VILAS MUTTEMWAR): (a) The Ministry of New and Renewable Energy (MNRE) is responsible for the subject of small hydro up to 25 MW. As per the Central Electricity Authority (CEA), the total hydroelectric power potential in the country is asessed

at about 150,000 MW equivalent to 84,000 MW at 60 per cent load factor. The potential of small hydropower projects (up to 25 MW) is estimated at 15,000 MW and that of wind power is 45,000 MW in the country.

(b) The Ministry is encouraging development of both small hydro power (SHP) and wind power in the country through various fiscal and financial incentives. So far, SHP projects of 2061 MW and wind power projects of 7940 MW (as on 31.1.2008) have been set up in the country.

(c) and (d) Yes, Sir. The Ministry is providing central financial assistance (CFA) for the setting up of small/mini hydro power projects both in public and private sector. The CFA is also given to community/individual watermill owners for development and upgradation of watermills for mechanical as well as electricity generation (3-5 KW). The CFA is to meet 75 per cent of the project cost limited to Rs. 30,000/- per water mill for mechanical application and Rs. 1.0 lakh per water mill for mechanical and electricity applications.

**Cooperation in power sector with Nepal and Bhutan**

411. SHRI MAHENDRA MOHAN: Will the Minister of POWER be pleased to state:

(a) whether Government is examining the possibility of tapping the resources available in the storage dams of Nepal and Bhutan to enhance energy supply;

(b) if so, the details thereof; and

(c) how much power is being imported from Bhutan and how much supply is likely to be increased?

THE MINISTER OF POWER (SHRI SUSHILKUMAR SHINDE): (a) and (b) Yes, Sir. India and Nepal have agreed, under the 1996 Mahakali Treaty, to jointly develop the Pancheshwar Multipurpose Project (5600 MW) on the Mahakali river, where it forms the border between the two countries. The two Governments are engaged in finalization of the Detailed Project Report (DPR) of the Pancheshwar Project. On the Sun-Kosi Sapta Kosi Project (around 3300 MW), a Joint Project Office has been established in Nepal with Government of India funds to carry out field investigation for preparation of the DPR. Preliminary discussions have also been held on the feasibility of Naumure Hydroelectric Project. In addition, Government of Nepal is taking steps for development of hydropower projects in Nepal through foreign and domestic private investments.

India has longstanding bilateral cooperation with Bhutan in the Hydropower sector. Government of India has assisted construction of 336 MW Chukha, 60 MW Kurichhu and 1020 MW Tala Hydroelectric Projects in Bhutan. In addition the Detailed Project Reports for two Storage Projects *viz.*, Sunkosh (4060 MW) and Bunakha (180 MW) in Bhutan were prepared with the assistance of Government of India.

An Inter-governmental Agreement has also been signed in July 2007 for the implementation of 1095 MW Punatsangchhu-I Hydroelectric Project in Bhutan.

(c) Currently, the Government of India is importing surplus power from Bhutan generated by Chukha (336 MW), Kurichhu (60 MW) and Tala (1020 MW) Hydroelectric Projects. During the period April, 2007 to January, 2008, 5064 MU of energy has been imported from Bhutan. Under a bilateral Agreement signed in July, 2006, Government of India has agreed to purchase 5000 MW of power from Bhutan by the year 2020.